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Editor - Captain L. B. Marshall, MC, USN

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Circular Letters:

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Saline Solution in Treatment of Burn Shock: The Surgery Study Section of the National Institutes of Health has recommended to the Surgeon General of the Public Health Service that the use of oral saline solution be adopted as standard procedure in the treatment of shock due to burns and other serious injuries in the event of large-scale civilian catastrophe.

The recommendations followed action taken at the January 1950 meeting of the Surgery Study Section, when such treatment was approved in principle. Dr. Carl A. Moyer, a member of the Study Section, was designated at that time to prepare a memorandum suitable for submission to Dr. Norvin A. Kiefer, Director, Health Resources Division (now Health Resources Office), National Security Resources Board.

Dr. Moyer's memorandum, which was submitted to Dr. Kiefer, February 15, 1950, reads as follows:

"Since the publication of the experimental work of Dr. Rosenthal, Dr. Coller, et al., orally administered salt solutions have been employed in the treatment of burns at the University of Michigan Hospital, Ann Arbor, Mich.; at the Wayne County General Hospital, Eloise, Mich.; and at Parkland Hospital, Dallas, Tex. Personal clinical experience, in the above-named hospitals, has convinced me that the orally administered salt solutions are valuable adjunctive agents in the treatment of shock incident to burns, fractures, peritonitis, and acute anaphylactoid reactions. Certain factors are important in governing the effectiveness of the oral administration of salt solutions. They are as follows:

"1. The composition of the salt solution: The most palatable salt solution is made by dissolving 3 to 4 Gm. of sodium chloride and 2 to 3 Gm. of sodium citrate in each liter of water. If sodium citrate is not available, ordinary baking soda may be substituted for it.

"2. The concentration of salt should not be in excess of 140 mEq. of sodium per liter. If the concentration is above this, vomiting and diarrhea become important complicating factors.

"3. Whenever profound peripheral circulatory collapse is present, the intravenous route of administration must be used until peripheral blood flow has been reestablished. The salt solutions that we have found most satisfactory for this purpose are Hartmann's solution (Lactate-Ringer's solution) or plasma. In addition to the salt solution or plasma intravenously, whole blood is given concurrently whenever peripheral circulatory collapse exists. This materially implements the effectiveness of salt solutions.

"The slightly hypotonic salt solution is the only drinking fluid permitted the injured individual until the edema of the injured parts begins to subside.

Certain exceptions to this rule have to be made during the hot weather of summer when it is sometimes necessary to permit the partaking of some non-salty water.

"As much as 10 liters of the hypotonic salt solution have been drunk in the 24-hour period by adults who have been severely burned. Since salt solution has been substituted for water, as a drinkable fluid, no burned person who has lived for longer than 3 hours after being admitted to the hospital has suffered from anuria. The 'early toxemia phase' of the burns has also failed to appear and the osmotic concentration of the plasma electrolytes has been well maintained.

"We feel that much more clinical observation and actual experimental work should be undertaken regarding the effectiveness of the basic principles of the supportive therapy of burns that have been so beautifully demonstrated by Dr. Rosenthal. It is obvious that the adoption of a more active program of investigation into the relative effectiveness of simple measures to combat shock would be of extreme importance to the Armed Forces and to the civilian population in the event of another war."

Because of the sharpened national emergency that developed during the summer of 1950, the Surgery Study Section, in approving Dr. Moyer's memorandum at its meeting on September 16, changed the last paragraph to read:

"While further clinical research concerning the effectiveness of oral salt solution in the treatment of burns and other injuries is certainly in order, there is already sufficient evidence to suggest that this form of treatment should be used in any large-scale disaster involving the civilian population."

The letter containing this paragraph was signed by Frederick A. Coller, M. D., professor of surgery, University of Michigan, Chairman of the Surgery Study Section. Members of the Study Section, in addition to Dr. Coller, are: Dr. Claude S. Beck, professor of neurosurgery, Western Reserve University; Dr. Loren R. Chandler, dean, Stanford University Medical School; Dr. Lester R. Dragstedt, professor of surgery, University of Chicago; Dr. Daniel C. Elkin, professor of surgery, Emory University; Dr. Carl A. Moyer, dean and professor of surgery, Southwestern Medical School, University of Texas; Dr. Harris B. Shumacker, Jr., professor of surgery, Indiana University Medical Center; Dr. Owen H. Wangensteen, professor of surgery, University of Minnesota; Dr. Allen O. Whipple, clinical director, Memorial Hospital, New York City; Dr. H. L. Skinner, chief of surgery, Staten Island Marine Hospital; Dr. Henry Beecher, professor of anesthesiology, Harvard University Medical School; Dr. J. Gordon Lee, chief of surgery, Mount Alto Hospital, Washington, D. C.; Dr. Howard R. Lawrence, chief of surgery, Francis E. Warren Air Force Base Hospital, Wyoming; and Dr. G. Halsey Hunt, chief, Division of Hospitals, Public Health Service. (Pub. Health Rep., 13 October '50)

Radiological Defense: The single greatest defense against radiological warfare consists of a clear understanding of what it can do. The bomb damage in Japan was caused by 3 factors, heat, blast, and radiation. The effects of heat and blast in an atomic explosion are similar to those of an ordinary explosion, but greatly magnified. It is estimated that the normal American-type houses up to 1-1/2 miles from the point of detonation would be so damaged that major repairs would be necessary to make them livable again. In Japan, relatively few direct injuries were caused by the blast or actual "squeezing" of the explosion pressure wave. Most injuries and fatalities resulted from being thrown against something or being struck by missles. Flash burns were the second greatest cause of injury or death. The third effect of the bomb blast, radiation, received much publicity. Predictions were made that Hiroshima would never again be safe for habitation. In fact, however, Hiroshima has been largely rebuilt, and crops grown in the vicinity are safe for human consumption. Only 10-15 percent of the total deaths were caused primarily by radiation.

There are 3 general types of radiation called alpha, beta, and gamma; also certain elements are naturally radioactive such as uranium giving off alpha particles, and radium giving off alpha, beta, and gamma particles. Alpha particles can be stopped by a thick piece of paper, by clothing, or by skin. Most beta particles can be stopped by 1/8 in. thickness of metal, but gamma rays can pass through 1 foot of concrete or 3 feet of earth. Since these rays are dangerous, tolerance doses have been established, for instance, in personnel working with x-ray machines. In an air burst, radiation injury sufficient to cause acute radiation illness will occur frequently for wholly exposed persons even a mile from ground zero. Exposed persons 1,400 yards away will receive doses of gamma radiation which will cause the death of about half of them. Under 1,000 yards exposed people will certainly be killed.

There are 3 types of atomic bomb bursts: the air burst, such as was used over Hiroshima; the ground burst, where the bomb penetrates the earth before exploding; and the water burst, where the bomb explodes under water. The effects of the 3 types of atomic bomb bursts essentially are: in air burst, extensive prompt radiation, no residual radiation, extensive blast and heat effects; in ground burst, less radiation than in air burst, more residual radiation, blast and heat effects concentrated in a much smaller area; in water burst, almost no immediate radiation, considerably more residual radiation, blast effects concentrated in much smaller area, and practically no heat effects.

In the event warning is received of an impending radiological attack certain common sense precautions can be taken to prevent or minimize personal injury.

A. Fifteen minute warning.

1. Turn off oil burning stoves.

2. Turn off pilot lights in gas stoves and water heaters.
3. Close fuel and draft doors to coal burning furnaces and wood stoves.
4. Open all doors and windows to minimize damage from pressure wave. After the explosion, close doors and windows to keep out radioactive dust.
5. Draw blinds. This is some protection from fire sparks, glass splinters, radiation, and radioactive dust.
6. Dress in loose fitting trousers or slacks, and loose fitting long sleeved blouses buttoned at the wrist. All clothing should be light colored. Wear a hat, brim down. Tuck bottoms of trousers or slacks into socks. Wear gloves. Moisten a handkerchief and place over face as a mask for use as a dust filter and protection against breathing radioactive dust and protection from flying glass and splinters.
7. Put flashlight in a pocket.
8. Draw drinking water in clean covered containers for use after attack and place in basement if possible.
9. Take shelter: If in a building, in the basement. Lie next to the wall, away from windows, or against the base of a strong supporting column. Keep away from center of floor. Do not take refuge on upper floors, which may collapse and where the danger of radioactive contamination is greater. If in the open, lie in a ditch or gutter or against the base of a substantial structure. Keep away from trees or flimsy structures that might fall or collapse.

B. Two or 3 second warning of radiological attack.

1. Lie flat on stomach, face cradled in arms, eyes tightly closed. Do not look up immediately after explosion. Remain prone for 10 seconds after explosion. This affords protection against flying missles and the temporary blindness resulting from looking into the dazzling light of the explosion.

In an atomic explosion the gamma rays are the most dangerous. The only protection is adequate shielding at the moment of explosion. In the immediate vicinity of the explosion reasonable safety is afforded by 1 foot of steel, or 3 feet of concrete, or 5 feet of earth. At 3,000 feet reasonable safety can be exprected from 5 inches of steel, or 15 inches of concrete, or 25 inches of earth. A mile from the explosion a fraction of an inch of steel or several inches of concrete would be sufficient. These short lived radiations are capable of setting up lingering artificial radioactivity in metal or glass objects such as silverware, canned and bottled food, and similar items. Unless the containers were broken,the food inside probably could be eaten safely.

The pressure wave or blast of an explosion is capable of causing great structural damage. The blast creates winds up to 800 mph within 1/2 mile from the explosion point. Within this area total destruction of buildings may be expected. In the area between 1/2 mile and 3 miles from the explosion the following damage to buildings can be expected: (1) heavy framed steel and reinforced concrete buildings will remain standing, although all windows will be

blown out; (2) unreinforced brick structures will be utterly demolished; (3) wooden structures will sustain serious damage;and (4) circular structures, such as smokestacks and telephone poles will probably remain standing. Therefore, to obtain the best protection from bomb blast it is necessary to take shelter below ground level; basements, subway tunnels,and similar underground structures should be used. If time permits take shelter in basements of heavy framed steel or reinforced concrete buildings with more than one exit. At all costs keep away from unreinforced brick structures.

After the radiological attack is over: (1) determine, if possible, the location of the explosion and the type (air, ground, or water burst). This can be done by observing the cloud caused by the explosion. The cloud of a high air burst reaches a height of 30,000 feet or more within 5-10 minutes and then begins to dissipate. Danger from radiation from an air burst will be over within 10 minutes. (2) Remain under cover until the rain or dirt fall, if any, has stopped. If no rain or dirt fall occurs remain in shelter for 5-10 minutes to allow the intensity of radiation to subside. (3) Try to help any injured people near you. Administer first aid. Put out small fires. Be careful of falling buildings and large fires. (4) In a ground or water burst leave the area, unless a radiological defense man announces that it is safe. (5) Try to assist in rescue or fire fighting work. (6) When the initial rescue work, fire fighting, and evacuation of the wounded is completed, take a shower if possible, completely scrubbing with soap 3 or 4 times. Hair, hands, and finger nails should be given special attention. If possible change to clean clothing and shoes. Discard the clothing worn in the affected area, particularly the shoes. (7) As soon as possible check with a radiological defense advisor and a doctor to make sure you are well and safe. (8) Do not pick up souvenirs, plunder, or loot. Such articles may be contaminated. Do not eat, drink, or smoke anything in (or taken from) the destroyed area. It is better not to take chances of getting contaminated material in your system. (9) Do not spread rumors. Enough confusion will exist without any additions. (Introduction to Radiological Defense, Director of Security, Fifth Naval District, June '50)

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Further Studies of the Beneficial Effect of Glutathione on X-irradiated Mice: The effects of the subcutaneous injection of glutathione, prior to irradiation, were studied in 4 consecutive experiments in which 2,343 male, Swiss Albino mice were exposed to various doses of total-body x-radiation. The lethal dose curves for glutathione-injected and non-treated mice were simultaneously determined in each experiment. The 28-day LD_{50} for the non-treated mice was 740 r; for mice that received 1.6 mg. glutathione per Gm. of mouse, the 28-day LD_{50} was 840 r, and for mice that received 4.0 mg. glutathione per Gm. of mouse, the 28-day LD_{50} was 950 r. These results indicate a quantitative relationship between glutathione dosage and the degree of protection it affords against x-ray damage.

Weight change and the effect of trauma were studied in the irradiated survivors in an attempt to demonstrate differences in the recovery rates of the glutathione-injected and the non-treated mice. For these studies, all mice were weighed daily throughout the 28-day observation period of each experiment and on the 29th day all surviving animals were subjected to controlled mechanical trauma produced by a Noble-Collip drum. The glutathione-injected mice lost less weight and were more resistant to trauma than their non-treated controls. (Naval Medical Research Institute, NNMC, Bethesda, Md., Proj. No. 006 012. 05.01, 20 June '50, W. H. Chapman and E. P. Cronkite)

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A New Concept of Treatment of Osteomyelitis of the Mandible: The treatment of osteomyelitis of the mandible has always been a serious problem. The old treatment, which consisted of drainage and watchful waiting, usually permitted the disease to run a course varying from several months to several years. During all this time the patient was incapacitated. By the use of chemotherapy and antibiotics, combined with surgical treatment, the progress of infection can be controlled, and the course of the disease shortened from years to a few weeks.

Osteomyelitis tends toward chronicity because of the histologic or histochemical makeup of the bone. Bone is formed by a few cells with a large amount of intercellular substances. When infection invades the soft tissue there is hyperemia, swelling, thrombosis of the vessels and necrosis of the cells. Leukocytes are poured into the region. Proteolytic enzymes are liberated which liquefy the necrotic cells and intercellular substances, forming a pus cavity or abscess. The walls of the abscess are formed by damaged tissue but still contain living cells, leukocytes, and macrophages which defend the body against the invading bacteria.

If an abscess is present incision and drainage is the best treatment. The sulfonamide drugs and the antibiotics retard the reproduction of the bacteria, or, in high concentration, kill them. After the abscess and soft tissue are drained, either spontaneously or by incision and drainage, or are absorbed, and the invading organisms removed or killed, the walls collapse and come together. The space is then healed by the formation of granulation tissue which seals the surfaces or fills in the space. The granulation tissues are replaced by connective tissues which form the scar.

When bone is invaded by infection, the process is identical until the stage of liquefaction is reached. There is pus formation because of necrosis of the cells of the bone and a collection of tissue fluids and leukocytes in the area. Thus, the bone becomes necrotic, but it still retains its shape since the calcified intercellular substance is not liquefied. The extent of the process depends upon the virulency of the invading organism and the resistance of the patient. In a typical advanced case of osteomyelitis of the mandible, where

there is an abscess formation around the necrotic bone and it is drained either spontaneously or by incision and drainage, forming a sinus, the periosteum builds new bone around the infected bone. At the same time, the necrotic bone is separated from the surrounding bone by resorption of bone at the junction of the necrotic with the living bone by the osteoclasts. The new bone is known as the involucrum and the necrotic bone, when it is completely separated, is known as the sequestrum.

While this process of new bone formation and separation of living bone from necrotic bone is going on, tissue fluids and leukocytes are pouring into the abscess area and draining out through the sinus opening. Some of the bone salts are dissolved out of the necrotic area by the absorptive active of the pus and tissue fluids. However, in extensive lesions where there is a large area of necrosis, the sequestrum eventually breaks loose. This can be removed through the draining sinus or surgically.

After the sequestrum is removed, the walls of the cavity do not collapse, as they are bone and form an ideal culture tube. In the cavity containing bacteria and tissue fluids, the temperature is ideal; therefore, suppuration continues and, as healing takes place, the cavity is gradually filled in by granulation tissue. Eventually, the cavity is filled in with connective tissue which is calcified and the continuity of the mandible is restored. This process may take years to be completed. Many of the normal reparative processes can be speeded up by surgical intervention. The course of osteomyelitis of the mandible can be shortened in two ways:

1. The necrotic tissues can be removed with the surrounding normal overhanging bone, creating a cavity or saucerization which the soft tissue can be pressed into to eliminate the defect.

2. Where the entire thickness of the mandible is involved or where sufficient bone is removed to produce deformity, the necrotic bone and granulation tissue can be removed and a metal plate applied to maintain the position of the bone fragments. Then the defect can be filled with pieces of cancellous bone removed from the ilium.

More than 100 cases of osteomyelitis of the mandible were treated by the author during a 4-year period. No attempt was made to isolate the causative organism since most of the patients had been treated by sulfonamides or penicillin before being seen by him. Early use of sulfonamides and penicillin reduces the incidence of osteomyelitis, or after it has developed, prevents its extension. However, once the bone has become necrotic, the dead bone must be removed and replaced by living tissue. In the treatment by incision and drainage, where the sequestrum is allowed to form, and is removed either by resorption, through sinus by incision, a cavity remains where wound secretions collect, acting as a good culture medium which invites infection and delays healing.

The surgical removal of the necrotic and overhanging bone permits the cavity to be filled in by soft tissue by means of pressure applied by a pressure dressing, thus preventing the collection of fluid in a dead space. Where there is a full thickness loss of the mandible, the area is restored by planting living cancellous bone to maintain this space. The graft stimulates new bone formation in spite of the fact that the bone is placed in an infected cavity. Cancellous bone can be placed in infected cavities of the mandible if all the necrotic bone and infected granulation tissue have been removed. Good circulation, plus the administration of enough penicillin and sulfonamides to maintain a blood level sufficient to prevent the growth of bacteria that remain in the surrounding tissue, permits healing to take place without infection. The elimination of any cavity or space to allow collection of tissue, fluid, or blood by a firm pressure dressing permits healing to take place without recurrence of infection. (J. Oral Surg., October '50, O. H. Stuteville)

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The Solitary Gallstone: Solitary gallstones are often thought to be harmless and are apt to be dismissed as unimportant findings if they are not producing symptoms. The purpose of this paper is to demonstrate that the solitary stone produces the same signs and symptoms as those caused by multiple stones, that it causes the same complications, and that these occur with sufficient frequency to make its presence, even when asymptomatic, a positive indication for cholecystectomy.

The material for this paper was obtained from the records of a series of 387 consecutive cases of patients operated on at the Presbyterian and Woman's Hospitals, Philadelphia, with a final diagnosis of cholelithiasis. Solitary gallstones were found in 82 of these cases, an incidence of 21 percent. On the basis of gross inspection they were classified as cholesterol stones in 58 cases and mixed stones in 24. They occurred with slightly greater frequency in the male. Their distribution according to age was essentially the same as that encountered for multiple stones.

A comparison of the frequency of the signs and symptoms produced by solitary and multiple stones revealed little information of significance. A history of abdominal pain was the outstanding symptom in the majority of the cases in both groups while nausea, vomiting, and dyspepsia were reported frequently. A history of chills and fever was obtained in approximately 10 percent of the patients with solitary stone as compared with 3 percent for the patients with multiple stones. Local tenderness was by far the most frequent finding on physical examination in both groups. A palpable mass or jaundice occurred with about equal frequency. The indications for surgery in the majority of the 387 cases studied were for symptoms referable to the biliary tract. In 10 cases of multiple stone cholecystectomy was performed in the absence of symptoms,

the sole indication for operation being the cholecystographic demonstration of their presence. The indications for surgery in the presence of solitary stones were more rigid, symptoms referable to the biliary tract being present in each of the 82 cases.

Some of the patients who had solitary stones had known of their presence for varying periods of time before onset of the symptoms which led to their removal.

Diagnosis of solitary gallstone can be made prior to operation only by cholecystography. Such a diagnosis is subject to error and multiple stones may be present when a solitary shadow is seen on the cholecystogram. This error occurred in 19 of 51 instances in which an x-ray diagnosis of solitary stone was made in this series, an error of 37.25 percent. The x-ray report of multiple stones was much more accurate, although there were 7 instances of 139 such reports in which a solitary stone was found at operation. It is evident that while a report of gallstones approaches 100 percent in accuracy, any attempt to predict the actual number present is unreliable.

The complications of chronic cholecystitis with cholelithiasis are acute cholecystitis, hydrops, empyema, gangrene with or without perforation, obstruction of the common bile duct, acute pancreatitis, internal biliary fistula, and carcinoma of the gall bladder. A comparison of the frequency of complications produced by solitary stones with those produced by multiple stones revealed a significant difference, one or more of the above complications being present in 41.47 percent of the patients with solitary stones as compared with 29.84 percent of the patients with multiple stones. This difference was due almost entirely to the increased incidence of acute complications (acute cholecystitis, gangrene, empyema, and acute pancreatitis) in the presence of solitary stones.

There were 3 deaths with a mortality rate of 3.65 percent in the 82 cases of solitary stones, as compared with 5 deaths and a mortality rate of 1.63 percent in the 305 cases of multiple stones. The overall mortality rate for the entire series of 387 cases was 2.06 percent.

Discussion. Frequently, patients with asymptomatic gallstones, particularly with the solitary stone, are advised to have nothing done surgically unless symptoms occur. Many physicians believe that the typically large solitary stone is incapable of becoming impacted in the bile ducts and that its presence is accordingly of little importance in the patient who does not have digestive disturbances which are referable to the biliary tract.

The close correlation between the incidence of solitary stones in this series of cases, all of which were symptomatic, and the incidence of asymptomatic solitary stones in another series suggests that they are just as prone to

produce symptoms as are their multiple counterparts. Furthermore, they produce the same signs and symptoms with about the same degree of frequency. The impaction of a large stone in the ampulla of the gall bladder will not only occlude the cystic duct but is quite apt to interfere with the circulation to the gall bladder, resulting in increased edema, inflammatory reaction, and even gangrene. This reaction may be sufficient to cause involvement of adjacent structures. In this series there were 2 cases of obstructive jaundice due to occlusion of the common bile duct by extrinsic pressure, the duct being free of stones in each instance. There were also 2 cases of acute pancreatitis associated with acute cholecystitis in which the sole etiologic agent found was a large stone impacted in the ampulla of the gall bladder.

There were 5 instances in which the solitary stone was found in the common bile duct. It is well known that stones can form in the ducts or that they can migrate there from the gall bladder.

This study would indicate that there is no logical reason for regarding solitary gallstones as any different from multiple stones in their ability to produce symptoms. The behavior of gallstones, whether single or multiple, large or small, is the same and their treatment likewise should be the same. (Surg., Gynec. & Obst., October '50, R. S. Mechling and J. R. Watson)

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Congenital Polycystic Kidney Disease: Polycystic kidney disease is a condition involving both kidneys; it ultimately destroys renal tissue and renal function and thus causes death. The disease occurs most commonly during the ages of from 40 to 60; it may occur in the very young or in the old. Heredity plays an important part and several members of the same family are often afflicted. The most important symptoms and signs are: pain, hematuria, palpable tumor either in one or both flanks, albuminuria, enlarged kidneys which may be revealed by flat x-ray of the abdomen and poor excretion of dye by one or both kidneys which may be revealed by intravenous urograms, and morphologic findings indicative of the disease which may be shown in the same way. Retrograde pyelography is the most positive diagnostic method. There are two main types of urographic findings in polycystic kidney disease. The first type shows abnormality in the pelvis, often called the compression pelvis, which is often mistaken for renal tumor. It is often necessary to explore these patients surgically. The second type is one of bizarre dilatation, which is chiefly localized in the calyces, although the renal pelvis is sometimes included.

When polycystic disease has progressed to a point at which renal failure is due to the disease itself, the prognosis is poor and the results of operative surgery are unsatisfactory. However, when polycystic disease is recognized early when renal function of each kidney is impeded but the urea nitrogen is not yet elevated, the patients may be benefited much more by surgery. More

recently, some urologists have thought that early surgical intervention might be more beneficial by conserving renal function. A review of 57 cases of polycystic kidney disease is presented, with special emphasis on the value of the Rovsing operation in reference to increasing renal function. Medical, supportive treatment only was carried out in 34 patients. Surgical treatment was instituted in 24 cases: nephrectomy in 7 cases; incision and drainage of cysts in 10 cases; exploratory operation in 6 cases; and drainage of perirenal abscess in 1 case. Renal function was greatly impaired in 75 percent of the cases. Indigo carmine renal function test and phenolsulfonphthalein tests usually show decreased values. The total renal function was greatly impaired in 40 percent of the cases, as shown by a marked elevation of the urea nitrogen in the blood. The retention tests of renal function usually give a better index of renal function than the excretory tests.

Pain was the most predominant symptom and occurred in 17 cases. The degree of pain varied in intensity from a dull ache, which was situated in the flank posteriorly or anteriorly, to severe intensity in several patients who had acute renal colic, resulting from an associated blood clot or renal calculus. Gross hematuria as the presenting symptoms occurred in 11 cases, and these patients required immediate hospitalization. The degree of hematuria often varied from mild to severe, and several of the patients required repeated transfusions. Bed rest and repeated transfusions were usually sufficient to control the bleeding. However, in several cases surgical intervention in the form of the Rovsing operation was necessary.

Because the treatment of patients with congenital polycystic kidneys has generally been considered a medical problem, they have been treated in the same manner as patients with chronic nephritis. In recent years, however, the greater value of surgical intervention has been recognized. The surgical procedure for each individual case must be evaluated carefully. The general surgeon occasionally encounters congenital polycystic kidneys while exploring the abdomen for what is thought to be another pathologic condition. In this situation it is very important that neither kidney be removed, since the renal status of such a patient has not been determined preoperatively. Such a condition has been encountered in 6 instances in this series.

Nephrectomy, when performed for congenital polycystic kidney, should be carried out carefully on a well chosen case. The trend should be to conserve renal tissue, and conservative operative procedure should be preferred. The renal function of each patient must be ascertained preoperatively. The presence of an elevated blood urea nitrogen is indicative of renal destruction and, therefore, contraindicates nephrectomy. Severe hemorrhage from a polycystic kidney should be controlled, when possible, by palliative measures, such as bed rest and repeated transfusions. The positive indication for nephrectomy is the presence of an associated pathologic lesion localized to one kidney, such as

severe suppurative pyelonephritis, which has not responded to chemotherapy, malignant renal tumor, and Goldblatt kidney. In this series nephrectomy was performed on 7 patients, with the following pathologic changes: (1) right congenital polycystic kidney and arteriosclerosis; (2) left congenital polycystic kidney, no evidence of function, preoperatively thought to be a renal tumor; (3) left congenital polycystic kidney with associated severe chronic pyelonephritis; (4) left congenital polycystic kidney and hypernephroma; (5) right congenital polycystic kidney with a bleeding vessel in a cyst causing severe hemorrhage; (6) right congenital polycystic kidney encountered at a laparotomy, and thus removed, preoperative diagnosis being chronic cholecystitis; (7) right congenital polycystic kidney in a newborn; it was removed because there was no function in this kidney and pyelographic findings were indicative of a renal tumor.

The Rovsing operation was performed upon 10 patients. It is well accepted that this operation is very useful for relieving excruciating, uncontrollable pain. It will also control hemorrhage localized to one kidney, which has been uncontrollable by palliative measures. In this group of cases, this operation was performed specifically for those patients with severe pain localized in one flank or severe hemorrhage from one kidney, either of which was otherwise unrelievable.

The Rovsing operation is beneficial in improving renal function in those cases in which there is an associated secondary renal pathologic disorder. At operation the complicating condition may be corrected. Bilateral Rovsing operations were performed primarily for gross, uncontrollable hemorrhage. There was an interval of 6 weeks between the first and second operations. The operation is of little help when performed upon patients with marked renal damage as evidenced by marked concentration of blood urea nitrogen. These patients may improve clinically, but only temporarily. The blood urea nitrogen gradually rises to a higher level after the operation and the patients die of uremia.

There is another group of patients upon whom a Rovsing operation was performed for unilateral, uncontrollable kidney hemorrhage. These patients responded well to surgery. They remained asymptomatic for many years. The renal function remained static or gradually decreased.

When complications exist in one kidney which would indicate nephrectomy, one must determine whether the renal function of the other kidney is sufficient to sustain life. The type of surgical procedure carried out depends upon the renal status of each individual kidney.

The Rovsing operation is very beneficial in the alleviation of pain and the stopping of gross hematuria. The operation will not improve renal function per se. However, when an associated pathologic condition in such a kidney is corrected, the renal function will improve. (Am. J. Surg., October '50, H. R. Newman)

A Polyamine Formaldehyde Resin in the Treatment of Duodenal Ulcer: The possibility of the clinical application of synthetic ion exchange resins was suggested in 1945. It was found that the Amberlite IR-4, a polyamine formaldehyde resin, was able to neutralize the HCl of gastric juice resulting indirectly in the inactivation of pepsin. Preliminary feeding tests showed that this resin was essentially non-toxic in the rat, even when fed to rats over a period of 8 months. In 1946 the resin was found to be non-toxic in rats, dogs, and human beings. A much finer mesh size (200) of Amberlite IR-4 was used, and it was noted that the rate of acid neutralization per Gm. of Amberlite was greatly increased. The use of this fine mesh resin in the treatment of peptic ulcer was reported in 1947.

These preliminary studies suggested that this fine mesh anion exchange resin was worthy of further clinical trial. Kraemer and his associates used this resin in capsule form for 82 ambulatory and 18 hospitalized duodenal ulcer patients in doses of from 0.5 to 1.0 Gm. every 2 hours alternating with 2 hour milk feedings. In the ambulatory group treated, 76 of the 82 patients remained symptom free from 1 to 17 months. Eleven of the hospital ulcer patients came to surgery and 7 were improved by the resin regime. No side effects (constipation, diarrhea, bloating, etc.) were noted.

Further studies in the use of this anion exchange resin in the treatment of duodenal ulcer have been reported by Marks, Weiss, Espinal and Weiss, and J. Weiss. In the work reported in these papers, the resin was administered mainly in 0.25 Gm. capsules. The starting dose varied from 0.5 Gm. every hour to 1 Gm. every 2 hours. Occasionally the resin was given in doses as a powder (1 Gm.) mixed in water every 2 hours; night doses were variable and in the cases of J. Weiss, 1.5 to 1.0 Gm. of the resin powder was given in milk at bedtime. Relief of symptoms occurred in 76 percent to 90 percent of the uncomplicated duodenal ulcer patients treated by these authors. No untoward side effects were observed.

J. Weiss stated that 40 of his 44 ulcer patients had relief in from 1 to 8 days and that the ulcer niche disappeared in 10 to 14 days,whereas the control patients required a longer period. The number of patients used as controls and the number of days required to heal the niche in these controls were not reported. The exact number of niches in his treated patients was not discussed.

From the studies appearing in the literature, it can be stated that this anion exchange resin in the fine mesh size is (1) an efficient neutralizer of HCl in vitro, (2) produces no adverse effects when used clinically, (3) relieves ulcer symptoms, and (4) may indirectly hasten the healing of the ulcer.

It was thought by the authors that it would be of further value to learn: (1) what dose is effective in elevating the pH in the stomach to the point of pepsin

inactivation, and (2) what therapeutic results would occur with such doses in patients with chronic duodenal ulcer of long standing.

The clinical study in this work deals with the administration of this resin to 41 patients who had a history of chronic duodenal ulcer ranging from 1-1/2 to 20 years. These cases were divided as follows: (1) recurrent patients: those who had healed in previous episodes by the usual milk or milk and various antacid therapy; (2) intractable cases: patients who had had no remission from pain for at least the preceding 9 months in spite of adherence to a milk or milk and antacid regime; (3) penetrating ulcers: patients with signs of peritoneal or pancreatic penetration with no relief by milk and other antacids; (4) partial obstruction: patients with retention as shown by symptoms, intubation,and x-rays.

Seventeen patients of the 26 classified in the recurrent group had clinical remissions. Three had only temporary relief and 6 failed to obtain any relief. The resin therapy failed to produce a remission in any of the complicated cases, all of whom came to surgery, although 5 patients had symptomatic relief.

Laboratory data suggested that the average dose necessary to elevate the gastric pH consistently is 2 Gm. of the powdered resin. Smaller doses may be efficacious because of the possible favorable effect upon the critical pH and pepsin activity in the first part of the duodenum. Practically no adverse side effects occurred with the administration of this resin. (Am. J. Digest. Dis., September '50, H. L. Segal et al.)

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Radioactive Iodine in the Treatment of the Hyperthyroidism of Nodular Goiter: For 2 years radioactive iodine has been used at the Cleveland Clinic in the treatment of hyperthyroidism. The 37 patients with nodular goiters who were selected for this therapy were all 40 years of age or older. The solitary adenoma was not chosen for such treatment. Radioactive iodine was used in several instances of large nodular goiters because the patient was averse to the idea of operation. In some of the patients the surgical risk was considered too great and thus surgery was contraindicated. A number of patients with small nodular goiters who were not suitable surgical risks were given a trial on definitive treatment with propylthiouracil or with methylthiouracil. Those who experienced prompt recurrence of hyperthyroidism upon cessation of the drug were considered candidates for radioactive iodine therapy.

The iodine was carrier-free I^{131} used as received from Oak Ridge, with their calibration. The only change was one of dilution; at no time was any stable isotope added.

In this series, diagnosis of hyperthyroidism arising in nodular goiters was made by members of the endocrinologic and surgical staffs in consultation who

based the diagnoses upon clinical judgment, basal metabolic rates, and in questionable cases, upon cholesterol determinations. All patients were asked to return at intervals of 2 months, at which time a clinical evaluation of their disease together with a basal metabolic rate determination constituted the basis for deciding upon further treatment. Thirty-three of the 37 patients have been followed 6 months or more. Of the several followed for a shorter period of time, only those in remission when last seen are discussed. Of the 37 patients, 2 were in the 5th decade of life, 14 in the 6th, 12 in the 7th, and 9 in the 8th decade.

Estimation of the size of the thyroid gland has been notoriously inaccurate, particularly in patients with large nodular goiters. Therefore, all of the thyroid weights have been grouped into 4 classes: Class IV if it seemed to weigh over 150 Gm.; Class III if it appeared to be more than 100 Gm. but less than 150 Gm.; Class II if more than 50 Gm. but less than 100 Gm.; and Class I if it was less than 50 Gm.

Twenty-eight of the 33 patients followed 6 months or longer are now in remission. The largest or Class IV goiters required 66.2 millicuries; the Class III goiters 37.6 millicuries; the Class II goiters 30.6 millicuries; and the Class I goiters required 23.4 millicuries. The average basal metabolic rate before treatment in the various classes was +33 percent in the largest goiters, +40 percent in the goiters of Class III, +44 percent in the goiters of Class II, and +35 percent in the goiters of Class I. For this entire group of patients the average dosage of I^{131} required to effect a remission was 37.3 millicuries, and the average basal metabolic rate was +39 percent.

The authors believe that the hyperthyroidism of nodular goiter can be controlled in the majority of cases with radioactive iodine. Whether it is the treatment of choice in nodular goiter is not discussed. It is believed that in selected patients in the older age groups with small nodular goiters, in individuals who may be poor surgical risks, and in some persons who are definitely averse to operation, treatment with radioactive iodine may be an acceptable type of treatment. Certainly any nodular goiter showing recent growth in one or more nodules, or any goiter in which the character of the nodules raises the question of malignancy, should be removed.

In the authors' experience in treating the hyperthyroidism of nodular goiter with radioactive iodine the total dosage depends to a greater extent on the size of the gland than on the severity of the disease. With this in mind, and in view of the toxic effects reported last year by the group from Memorial Hospital, one might question the desirability of treating the large goiters with the amounts of iodine necessary to control their hyperthyroidism, unless special indications are present.

Most of the patients with nodular goiter in this series who were treated with radioactive iodine have needed larger amounts of the iodine than have

usually been necessary for production of remissions in Graves' disease. It is postulated that response to radioactive iodine therapy might aid in the final correct classification of the type of disease present. Concerning the decreased response of nodular goiter to radioactive iodine as compared with the response usually seen in Graves' disease, it might be concluded: (1) that the radioactive iodine gets lost in the colloid of a huge nodular goiter and, being relatively far away from the cells, fails to irradiate them effectively; or (2) that the nodules are in different states of activity and, as the hyperactive nodules regress, other nodules become hyperactive; or (3) that toxic nodular goiter is so totally different from the hyperplastic diffuse goiter of Graves' disease that the uptake of radioactive iodine is totally different, and thus the response to therapy differs as well. (J. Clin. Endocrinol., September '50, C. E. Richards et al.) (See also Medical News Letter, Vol. 16, No. 5, 22 September 1950, p. 14.)

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Modern Treatment of Malaria: Chemotherapy of malaria, in order to be effective in the field, must have suppressive as well as curative properties because reinfection is almost certain. Specific antimalarial drugs are indicated only when the plasmodia are demonstrable in the blood, even if the parasites are present without symptoms. The drug of choice is chloroquine.

Chloroquine Diphosphate (Aralen). This drug has been found to be highly effective in the treatment of all types of human malaria and has a very low toxicity. Patients having any of the 4 malarial parasites or a mixed infection with or without symptoms and having either their first attack or a relapse are treated with chloroquine as follows:

Oral medication: 1.0 Gm. (0.6 base) initial dose
0.5 Gm. (0.3 base) 8 hours later
0.5 Gm. (0.3 base) daily for 2 successive days

The total dose is 2.5 Gm. of chloroquine diphosphate or 1.5 Gm. of the base, followed by 0.5 Gm. (0.3 Gm. of base) once a week as a suppressive dose as long as the individual is in an endemic malarial zone and is continued for 4 weeks after leaving the endemic area. If for some reason oral medication cannot be instituted, e.g., in cases of vomiting, unconsciousness, etc., chloroquine may be given intramuscularly. A vial containing 0.2 Gm. of chloroquine base in 5 cc. of sterile, unbuffered aqueous solution, making a 4.0 percent solution, is an optimum dose for intramuscular use. It will be absorbed rapidly and clear the patient's blood of plasmodia. This should be followed in 3 days by a course of chloroquine by mouth; then by the use of chloroquine as a suppressive as indicated above. Should patients exhibit toxic symptoms from the use of chloroquine, the use of ammonium chloride will promote renal excretion of the drug and will combat toxicity.

Atabrine (Quinacrine Hydrochloride). This drug, which was of enormous value during World War II, has now been largely replaced by chloroquine. The latter is less toxic and does not lead to the deposition of a yellow pigment in the skin. The recommended dosage of atabrine is 0.2 Gm. (3 gr.) every 6 hours for 5 doses; follow by 0.1 Gm. (1-1/2 gr.) 3 times daily for 6 days. Total dosage: 2.8 Gm. in 7 days. The drug should be administered after meals, as this reduces the toxic symptoms. In cases in which oral medication is impractical, atabrine 0.2 Gm. (3 gr.) in 5 cc. of sterile distilled water may be injected into each buttock. An effective blood level is reached within 15 to 20 minutes after the injection.

The suppressive dosage is 0.1 Gm. (1-1/2 gr.) atabrine 6 days a week after meals. This dosage is based upon experience with the Pacific strains of malaria and may be decreased or increased depending upon the strains encountered in different areas of the world. Contraindications: History of psychotic disturbances.

Quinine Sulphate. Quinine sulphate was the standard antimalarial drug prior to World War II. It terminates an acute malaria attack but cures only a small percentage of patients with benign tertian- and quartan- malaria. If quinine sulphate is taken with pentaquine by such patients, it reduces the relapse rate to almost zero. Its use must be stopped if black-water fever develops.

Pentaquine Phosphate. Stubborn, relapsing vivax malaria can be effectively treated with pentaquine phosphate. Dosage: 13.3 mg. (10 mg. of pentaquine base in 1 tablet) is given orally with 0.65 Gm. of quinine sulphate 3 times a day at 8 hours intervals for 14 days. It must be given in conjunction with quinine or it will prove ineffective. This drug is somewhat toxic, especially for colored races in whom it produces nausea, vomiting, anorexia, and abdominal cramps. Intramuscular hemolysis may ensue and must be recognized early by blood and urine examination. Under such circumstances, the drug must be promptly stopped in order to avert further damage to the system. Colored patients should be hospitalized when pentaquine treatment is to be used. It should not be given concurrently with sulfonamides or other antimalarials other than quinine.

Paludrine (Chlorguanidine Hydrochloride). Paludrine is supplied in 0.1 Gm. tablets. It is efficacious in the cure of falciparum malaria and is tolerated in large doses. However, it has no advantage over chloroquine. For suppressive doses, 1 tablet per day should be taken. In some areas, resistant strains of plasmodia have developed. (CDR J. M. Amberson and CDR T. K. Ruebush)

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Glaucoma. Some Social and Medical Aspects: Over a period of 1 year 90 patients were referred to the author for treatment and study at the glaucoma clinic of the Brooklyn Eye and Ear Hospital. The age of onset in 81 (90 percent) was over 40 years. Of these 81 cases, 55 were of the chronic variety, the majority involving both eyes. Four additional cases had increased tension without fundus changes. Thus, in 73 percent of patients over 40 years of age, the glaucoma was of the insidious variety and likely to progress to a considerable loss of vision unless detected early.

The percentage of older persons in the general population has been increasing steadily, thus making glaucoma a social problem of great importance because, in proportion to the increasing longevity curve, a greater number of glaucoma patients can be expected. The early recognition os this disease is, therefore, of extreme importance. Since a majority of persons become presbyopic at about the age of 40 years, it is important that the examination for glasses in this age group be performed by those competent to take a proper history, to examine the anterior chamber and fundus, and, if necessary, to do special examinations such as tonometry, gonioscopy, and provocative tests.

According to the National Society for the Prevention of Blindness, at least 3,400 persons become blind because of glaucoma each year. This does not take into account those blind in one eye, those with considerable loss of vision but able to get around, and the very many cases not reported. The loss in earning power and in public money necessary to take care of these blinded persons and their families is a problem which affects every taxpayer and every social agency. Adequate social service follow-up is an essential part of a glaucoma clinic because some of the patients are unable to comprehend the seriousness of their condition and may neglect themselves until too late for help.

An important recent advance in the early recognition of glaucoma has been the progress in the study of the chamber angle with the goniolens or prism. Glaucomas have recently been classified into two groups: (1) the narrow-angle and (2) the wide-angle glaucomas. However, this classification does not always adequately describe the cases with which one is confronted. It would seem that the old classification is sometimes more descriptive of the clinical condition.

Medical Treatment. No drug or combination of drugs has been found which has given good results in all cases. Certain drugs have given consistently better results than others. The author did not treat the cases of acute glaucomas seen in the general eye clinic, where they were treated. A review of the records, however, would seem to indicate that the most consistent and best results in lowering the tension was from a combination of eserine and pilocarpine or mecholyl and prostigmin, the latter being especially favored at the Brooklyn Eye and Ear Hospital.

In the special glaucoma clinic, the most uniform and best results have been obtained with pilocarpine in cases in which the tension was below 35 mm.

Hg (Schiøtz). Pilocarpine has been effective over long periods of time, is well tolerated by patients, and gives the least amount of local reaction. It has been used in strengths up to 5 percent. In patients with higher tension than 35 mm. Hg, carbaminocholine (carcholin) has proved most effective and is usually well tolerated by the patients. Furmethide does not give such good results as carcholin; however, in 2 cases, no other drug but furmethide was able to control the tension.

D.F.P. (di-isopropyl fluorophosphate) has been somewhat of a disappointment, although in 3 cases it was the only drug that kept the tension under control. In 2 cases, the tension rose considerably and the pain became severe so long as D.F.P. was used. In 1 patient who had severe pain but in whom the tension was controlled, the pain was relieved by prior instillation of neosynephrin. D.F.P. should be tried in all cases that have not responded to other miotics. It may give a gratifying and unexpectedly good result.

Recently there was a report of the greater efficacy of D.F.P. if a 0.05 percent solution was used instead of one of a 0.1 percent strength. More recently there was a paper showing excellent results by using a 0.2 percent solution. It is difficult to reconcile the discrepancy. The author's impression is that, as a whole, glaucoma clinics obtain better results with the use of any medication because of better supervision by the staff and better cooperation by the patients. These better results may be due to psychic or emotional factors. It is well known that psychic or emotional disturbances can bring on attacks of glaucoma. Therefore, anything that improves the psychic and emotional factors will help in the better control of the glaucoma. At any rate, no case should be given up until all known therapy has been tried. (Am. J. Ophth., September '50, D. Kravitz)

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Tobacco Smoking Habits and Cancer of the Mouth and Respiratory System: There has been a sharp rise in the frequency of lung cancer in recent decades. This once rare disease now causes almost as many deaths as pneumonia or tuberculosis among white males in a city like Chicago. Of all neoplastic diseases in adult males, the incidence of lung cancer has shown the most rapid increase in recent years. Its incidence has been shown to be greatest in the dirtier sections of industrial cities, where pneumonia and tuberculosis rates are also highest.

In searching for possible reasons why men should be so much more involved than women in the sharp rise of respiratory disease death rates in industrial districts, the possible contributory role of tobacco smoking was investigated. Having previously shown a significant relationship to exist between air pollution and the 3 serious respiratory disease death rates (cancer, pneumonia, and tuberculosis), the authors next investigated their connection with tobacco smoking habits.

Carcinogenic compounds have been isolated from the tarry substances of both coal and tobacco smoke, as well as from the smoke of a great variety of other slowly burning organic substances. These tarry substances are otherwise irritating to the respiratory passages of laboratory animals inhaling tar-laden soot.

In the present report dealing with the smoking habits of some 568 white men dying of buccal and respiratory tract cancer in Detroit and Cincinnati, the authors show a significantly higher incidence of pipe and cigar smoking among the buccal cancer victims than among controls of similar sex and age distribution and a significantly higher incidence of all forms of smoking among those dying of lung cancer. Thus, buccal cancer victims are significantly more addicted to pipe and/or cigar smoking than are the proper control population groups. Buccal cancer and control groups show no significant difference in cigarette smoking habits. This association of pipe and/or cigar usage with cancers of the buccal tissues has often been noted in medical literature and has been attributed to the more sluggish combustion and greater production of irritating tarry materials in these forms of smoking.

With cancers of the respiratory tract from the larynx downward, an abnormally high percentage of cigarette smokers, as well as of pipe and/or cigar users, is found. This group of cancer victims exhibits significantly increased percentages in all forms of smoking.

Roffo found that 95 percent of all respiratory tract cancers occurred in smokers. In the present series, 93 percent of all lower tract cancer victims, but only 90 percent of upper tract cancer victims, were smokers. Many other investigators have reported 90-95 percent incidence of tobacco smoking among respiratory tract cancer victims, with rather direct indictment of pipe and cigar smoking for cancers of the lip and tongue. The present study is the first to indicate an indictment of all forms of smoking for cancers of the lower respiratory tract. It was found that the percentage of cigar and pipe smokers is almost twice as high among white male victims of buccal cancer as among appropriately selected controls; all forms of smoking are significantly higher among victims of respiratory tract cancer than among the controls. The percentage of non-smokers among white male respiratory tract and buccal cancer victims is only one-fourth as high as among properly selected control groups. Cigarette smoking seems to bear a highly significant relation to cancers of the respiratory tract but no significant relation to the incidence of buccal cancer. (Cancer Research, September '50, C. A. Mills and M. M. Porter)

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Histoplasmosis: The exhaustive study of the genesis of appendicitis presented by Wangensteen in 1939 has directed attention to lymphoid hyperplasia

as a common cause of appendiceal obstruction with resultant acute, subacute, recurrent, and chronic appendicitis. During the authors' recent studies of benign gastrointestinal histoplasmosis in children it became apparent that this cause of lymphoid hyperplasia was of importance in production of abdominal symptoms in all age groups, and that the organisms could be demonstrated in a significant percentage of surgical specimens.

A major factor delaying recognition of the offending organism is the difficulty encountered in culturing it. Twenty-eight years after Darling's description, deMonbreun succeeded (1934) in culturing it from a case of the generalized fatal disease. Other successful cultures have been obtained in the generalized disease where large numbers of organisms have been present. Several positive cultures have been reported in cases that have recovered. Howell states that in transferring cultures in the laboratory, 50 million viable spores must be inoculated into a single culture medium to insure growth.

The recognition of intracellular organisms in lymphoid tissue, aided by special stains, and development of technics for the laboratory demonstration of delicate mycotic organisms, have enabled the authors to establish benign histoplasmosis as a common disease of childhood and have led them to postulate that it is an important factor in appendicitis and mesenteric adenitis.

A total of 2,135 cases of appendicitis were encountered in a 10-year review at Henry Ford Hospital: 1,173 acute appendicitis; 768 chronic appendicitis; and 164 normal and miscellaneous conditions. Material from 30 cases clinically diagnosed as mesenteric adenitis were reviewed in this category. Twenty-one current cases, 13 of acute appendicitis, and 8 of chronic appendicitis, were examined. One case of mesenteric adenitis was encountered during the period of study.

This survey of 2,135 surgical specimens revealed organisms morphologically identified as Histoplasma capsulatum in 103, or 5 percent of cases. The presence of organisms was associated in all cases with a marked lymphoid hyperplasia. The significance of this infection in appendicitis was immediately apparent, and while clinically it most often was manifest as acute or recurrent acute appendicitis, the frequency of chronic appendicitis caused revision of the concept of this disease and recognition of a common specific infection causing chronic inflammatory disease of the appendix, which had a definite symptomatology and was a frequent important causal factor in the more readily recognized acute disease.

Of even more significance was the finding of organisms in 13, or 43 percent of 30 cases of mesenteric adenitis. In all cases of mesenteric adenitis encountered at operation a lymph node should be biopsied and cultured. Positive diagnosis will often explain chronic gastrointestinal symptomatology. The results of culture of the organism from tissue were not disappointing,

since previous work had indicated the difficulties to be expected. Demonstration of a delicate yeast at 37° C that grew as a Mycelia sterila at 30° C was considered significant. Reduplication of the picture in mice in morphologically positive cases was uniform and has suggested itself as the method of choice in demonstrating the organism. The close correlation between these results and results obtained in prior studies enhance their value.

The clinical picture revealed by review of case histories is one of low-grade chronic disease, characterized by recurrent abdominal discomfort, low grade fever, acute exacerbations of abdominal pain, frequent pulmonary infiltration, and hilar enlargement with negative tuberculin skin reaction. The case reports emphasize this clinical picture and indicate the value of recognition of the disease entity and correct diagnosis. (Ann. Surg., October '50, A. Raftery et al.)

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Report on Surgery of the Stomach and Duodenum for 1949: In 1,156 patients operated on in 1949 at the Clinic for lesions of the stomach and duodenum the hospital mortality rate was 2.4 percent. Gastrectomy for malignant lesions of the stomach was performed in 168 cases, with a hospital mortality rate of 6.5 percent. In 20 of these cases total gastrectomy was performed. The hospital mortality rate of partial gastrectomy for malignant lesions of the stomach was 5.4 percent; after total gastrectomy the rate was 15 percent. In 607 cases partial gastrectomy was carried out for benign lesions with a hospital mortality rate of 1.3 percent. In 357 cases it was done for duodenal ulcer with a hospital mortality rate of 1.1 percent; in 134 cases it was done for gastric ulcer with a hospital mortality rate of 2.2 percent; in 25 cases it was done for both gastric and duodenal ulcer with no deaths; in 53 cases it was done for gastrojejunal ulcer with a hospital mortality rate of 1.9 percent.

In 73 cases vagotomy was done. It was associated with previous or simultaneous other gastric operations in all but 6 cases. In 2 cases (0.4 percent of all cases of duodenal ulcer in which operation was performed) vagotomy was done without other operations on the stomach in the treatment of duodenal ulcer. Vagotomy was used in association with gastro-enterostomy in 40 cases and in association with partial gastrectomy in 4 cases. It was used in 14 patients with recurring ulcer after partial gastrectomy and in 3 after gastro-enterostomy. It was not used alone in any cases of gastric ulcer. There were no deaths in this group of 73 vagotomized patients. (Proc. Staff Meet. Mayo Clinic, 27 September 1950, W. Walters et al.)

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From the Note Book

1. Investigators report severely burned patients treated with ACTH. One had an electrical burn and the other a gasoline burn, involving 70.7 percent of surface area with 50 percent 3d degree. Following adequate and prolonged ACTH administration, without the use of antibiotics, blood or plasma, clinical evidence of shock was not noted, slight or no signs of toxicity were present, moderate hyperpyrexia, no weeping,and bullae and blebs underwent rapid adsorption. There was no secondary infection. Kidney studies indicated no azotemia or decrease in output. Oral food consumption was maintained at over 4,500 calories while liquid intake was correspondingly high. Hypoconcentration was not present at any time. Pain was minimal. Epithelialization of the 3d and 4th degree burns occurred amazingly fast. There was no evidence of scar tissue formation. Further reports will be published. (J. Clin. Endocrinol., September '50, M. J. Whitelaw and T. W. Woodman)

2. The National Cancer Institute announces the publication of a new report entitled, An Index of Tumor Chemotherapy. The 329 page monograph compiled by Dr. Helen M. Dyer represents the most comprehensive survey made to date of world literature on the results of treatment of tumors by chemical methods. Requests for copies of the report will be filled to the extent possible within limitations imposed by the size of the edition. Requests should be addressed to the Cancer Reports Section, National Cancer Institute, Bethesda 14, Maryland. Copies of the report have been sent to all medical schools, large scientific libraries in the United States and Canada, and to large city public libraries.

3. The Health Resources Advisory Committee of the National Security Resources Board has been created. The Committee will assist and advise the NSRB on problems of the Nation's health relating to national mobilization and in the event of atomic war, and will act to coordinate federal agencies on policy problems dealing with health, hospitalization, and medical services. (J.A.M.A., Editorial, 30 September '50)

4. Thirty-one American libraries in all parts of the country have been named as official depositaries for complete sets of atomic energy declassified and unclassified research reports. Each library undertakes to provide access to these reports, reference service, and photo copies to users in accordance with its established price for such services. (Am. J. Surg., October '50)

5. The third World Health Assembly of the World Health Organization of the United Nations held in Geneva on 8 to 27 May 1950 was attended by delegates from 57 member states. The pestilential diseases, notably plague, cholera,yellow fever, smallpox, and typhus were added to the list of priority programs. An expert committee on unification of pharmacopeias was established, to develop an international pharmacopeia in standardizing information on more than 180

drugs, thus assuring Americans traveling abroad that they will receive drugs of an approved purity and potency. (J.A.M.A., 7 October '50, E.J. McCormick)

6. Dr. A. R. Shands, Jr., Medical Director and Head, Hospital and Research Foundation for Crippled Children of the Alfred I. duPont Institute, Wilmington, Delaware, was the guest lecturer at the Naval Medical School, National Naval Medical Center, Bethesda, Maryland on October 27. His subject was, "Some of the Problems of the Hip in Childhood."

7. Dr. Browning O. Chartrand, D.D.S., F.A.C.D., lectured on "Immediate Dentures" at the Naval Dental School, National Naval Medical Center, Bethesda, Maryland on October 26, 1950.

8. The delegates of the American Hospital Association have adopted a resolution authorizing their board of trustees to establish a nationwide hospital approval program. (J.A.M.A., Editorial, 30 September '50)

9. "A Panorama of Naval Medical Research" appears in the October 1950 issue of the U. S. Armed Forces Medical Journal. (Captain C. C. Shaw, MC, USN)

10. The "Isotron" has been developed at Northwestern Medical School for the purpose of accurately locating brain tumors. The new technic was developed by Dr. Loyal Davis, Dr. LeRoy, Dr. Cooper, Dr. Ashkenazy, and physicist Ted Fields. (Am. J. Surg., October '50)

11. A motion picture camera employing simple optical and mechanical systems to obtain up to 300 successive 4x4 in. frames at ratios varied from 10^5 to 10^9 frames per second and exhibiting satisfactory resolving power is described. (Rev. Scient. Instruments, July '50, M. Sultanoff)

12. The simultaneous use of aureomycin hydrochloride by mouth and dihydrostreptomycin sulfate intramuscularly in the treatment of brucellosis is described. (J.A.M.A., 14 October '50, W. E. Herrell and T. E. Barber)

13. The number of married people in the United States in now at an all time high of almost 75 million, which is 14-1/2 million more than only 10 years ago. (Metropolitan Life Insurance Company statisticians, Am. J. Surg., October '50)

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Course in Medical Aspects of Special Weapons and Radioactive Isotopes: The Bureau of Medicine and Surgery announces a course of instruction in Medical Aspects of Special Weapons and Radioactive Isotopes. This course is to be conducted by the Commanding Officer, U. S. Naval Medical School, at the

National Naval Medical Center, Bethesda, Maryland. It is scheduled to convene on Monday, 27 November 1950 and continue to 2 December 1950.

The purpose of this course is to present problems likely to be confronted and technics to be employed by medical and dental officers in the field of radioactivity. The subjects will be presented by speakers of outstanding prominence in their specialties; hence, it is assured the presentation will be interesting and informative to all Medical, Dental, Medical Service, and Nurse Corps officers.

This course is conducted primarily for the benefit of inactive Reserve Medical and Dental officers; however, a limited number of officers of the medical department on active duty may be given "Authorization orders" (no expense to the government) in accordance with paragraph 3 of BuPers-BuSandA joint letter 50-362 NDB of 15 May 1950.

Inactive Reserve Medical, Dental, Medical Service, and Nurse Corps officers residing in the 1st, 3d, 4th, 5th, 6th, 8th, 9th naval districts and Potomac River Naval Command who desire to attend this course should submit their request for training duty to the Commandant of their home naval district. All requests should reach the Commandant's office at the earliest practicable date.

It is desired to invite inactive Reserve officers' attention to the fact that acceptance of orders to attend this course WILL NOT, in any way, increase the possibility of involuntary recall to active duty of the officers concerned. Therefore, inactive Reserve medical department officers are encouraged to take advantage of this opportunity to attend this course on active training duty orders in a pay status.

Meals and a limited number of sleeping quarters will be available for those officers who desire such accomodations. (Reserve Div., BuMed)

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Course in Technics of Using Radioisotopes in Research: The Oak Ridge Institute of Nuclear Studies, Oak Ridge, Tennessee, has announced that 3 sessions of the Basic Course in Technics of Using Radioisotopes in Research will be given at Oak Ridge on the following dates:

8 Jan - 2 Feb 1951
19 Feb - 16 Mar 1951
16 Apr - 11 May 1951

Applications from medical officers on active duty who are interested in this field of study should be forwarded to BuMed sufficiently in advance of the convening dates of the course sessions to insure completion of arrangements with the Institute.

The entrance fees of $25.00 for officers approved to attend the course will be borne by BuMed and authorization orders only provided in accordance with BuPers-BuSandA joint letter of 10 May 1950 (NDB: 50-362). No reliefs can be furnished for officers during the period they are attending the course. (Professional Div., BuMed)

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List of Recent Reports Issued by Naval Medical Research Activities:

Naval Medical Research Institute, NNMC, Bethesda, Maryland,

II. Further Studies of the Beneficial Effect of Glutathione on X-irradiated Mice, NM 006 012.05.01, 20 June 1950.

Naval Medical Field Research Laboratory, Camp Lejeune, North Carolina.

Prototype Packaging of: "Chest, Microscope, Field, Malaria," "Chest, Entomology," and "Chest, Rodent and Rodent-Parasite, Survey," NM 007 083. 02.09, October 1950 (Restricted).

Naval Medical Research Unit No. 4, AdCom, USNTC, Great Lakes, Illinois,

Studies on Streptococcal Disease in Naval Recruits: The Recovery of Beta Hemolytic Streptococci Under Varying Epidemiological Conditions, NM 005 051. 04.01, 1 October 1950.

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ALNAV 108 11 October 1950

Subj: Annual Physical Examinations

Alnav 108. Annual physical examinations shall be conducted and reported in accordance paragraph 21104, Manual of the Medical Department, except that in cases of flag officers examination shall be conducted regardless previous examinations during year and shall include ECG study and shall be reported to BuMed on SF88 in each case with specific comment as to physical fitness for performance all duties of respective rank or grade at sea and on foreign service or in the field as appropriate.

-SecNav Francis P. Matthews

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BUMED CIRCULAR LETTER 50-116 17 October 1950

From: Chief, Bureau of Medicine and Surgery
To: All U. S. Naval Hospitals, except Yokosuka
(Via advance mimeograph copy)

U. S. Naval Dispensaries, Washington, D.C., and San Francisco, Calif.
All dispensaries listed in NDBul. of 15 Aug 1950, Item 50-600.
(Via Bulletin of BuMed Circular Letters)

Subj: Report of Staffing Ratios at Medical Treatment Facilities (Report Symbol DDOMS-3)

Ref: (a) BuMed C/L 50-103 of 20 Sep 1950

1. Reference is modified as follows:

Paragraph 1, tables a and b: Delete the caption "Residents."

Paragraph 2, second sentence: Delete the words "and residents."

2. The effect of the above modification is that residents will be included under the caption "other physicians" rather than be shown separately.

-C. A. Swanson

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BUMED CIRCULAR LETTER 50-117 18 October 1950

From: Chief, Bureau of Medicine and Surgery
To: All Medical Activities Providing In-Patient Care

Subj: Disposition of Clinical Records Arising from Joint Hospitalization

Ref: (a) Item 41, Par 12B11.5(c), Manual of the Medical Department

1. Reference (a), Item 41 of the BuMed Field Records Schedule, concerning patients' jackets or clinical records, is hereby modified. An appropriate change will be made in a new records schedule to appear as part of Chapter 23 of the Manual of the Medical Department.

2. Upon discharge to duty of an Army patient from a Navy hospital, the patient's jacket or clinical record shall be removed from the numerical file of patients' jackets and sent to the Adjutant General, Washington 25, D. C., Att: Personnel Information Branch. In the case of an Air Force patient who is discharged to

duty, the record shall be sent to the Army Records Depository, St. Louis, Missouri. If such a patient is transferred to an Army or Air Force installation for further treatment or disposition, the record shall be sent to the receiving Army or Air Force installation. Out-cards shall be inserted in the hospital's patients' jacket file in place of the removed jackets. The cards shall indicate the name, case number, diagnosis, date of discharge, and the place to which the record has been sent.

3. By agreement with the Army and Air Force, a reciprocal arrangement will be followed with respect to Navy patients hospitalized at their medical activities. When a Navy patient is discharged to duty from an Army or Air Force installation, the patient's jacket or clinical record will be sent to the Naval Records Management Center at Garden City, New York. If such a patient is transferred to a Navy medical activity, the record will be sent to the receiving Navy activity.

4. X-ray films created as a result of joint hospitalization shall be disposed of in the same manner as the clinical records.

5. The prescribed procedure for disposition of Navy records on Army and Air Force personnel does not alter already existing regulations for the disposition of the Navy's records on its own personnel.

-C. A. Swanson

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BUMED CIRCULAR LETTER 50-118 23 October 1950

To: All Ships and Stations

Subj: Services for Poliomyelitis Victims

1. Herewith is quoted, in part, a letter received from the National Foundation for Infantile Paralysis, Inc., of 120 Broadway, New York 5, N.Y., which contains information of value in presenting services and financial aid available to poliomyelitis victims.

"It is the policy of the National Foundation for Infantile Paralysis and its chapters to provide financial aid to those stricken with polio who are unable to pay the full costs of care. When the victim is stricken while within an area assigned to a chapter of the National foundation, the hospital or doctor handling the case will direct his family to the local chapter to arrange for immediate financial aid whether in the case of civilians or dependents of members of the Armed Forces.

"When the victim is a United States national and is stricken while outside the continental limits of the United States where there is no chapter of the

National Foundation for Infantile Paralysis, application for aid should be made as follows:

"a. Members of the Armed Forces and their dependents. Members of the Armed Forces are entitled to treatment in government hospitals. Their dependents may, under certain conditions, receive treatment in government hospitals. When this service is not available or when necessary equipment and specialists are not at hand an application for aid should be made by the medical officer of the Armed Forces conversant with the case, through the commanding general or admiral of the theatre or sub-theatre where the victim may be, direct to the National Foundation for Infantile Paralysis, 120 Broadway, New York 5, N.Y., attention Armed Forces Division.

"b. Officials and employees of the State Department or other non-military departments of the United States or civilians on government business serving abroad, and their dependents. Application for aid should be made by the American Ambassador, or head of mission, serving in the country in which the case originated, through the State Department, direct to the National Foundation for Infantile Paralysis, 120 Broadway, New York 5, N.Y.

"c. Civilians on government business in Germany (other than the State Department), and their dependents. Application for aid should be made through the Office of the U. S. High Commissioner in Germany, Military Government of the United States, direct to the National Foundation for Infantile Paralysis, 120 Broadway, New York 5, N.Y.

"d. Civilians on government duty in Japan and their dependents. Application should be made through the Office of Public Welfare, SCAP, direct to the National Foundation for Infantile Paralysis, 120 Broadway, New York 5, N.Y.

"e. United States civilians abroad on non-government business or as tourists. Necessary aid for United States civilians abroad on non-government business or as tourists can be obtained upon arrival in the continental United States or in the territories or possessions thereof. The military authority commanding the area in which the civilian is stricken with polio or the American Embassy in the country in which he is under treatment are requested to communicate direct with the National Foundation for Infantile Paralysis to arrange for necessary aid for the patient upon arrival.

"All requests for aid should state; name of patient, age, involvement, place and date of onset, occupational status, home address of patient, attendant and equipment required and where patient is at the time hospitalized."

-C. A. Swanson

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BUMED CIRCULAR LETTER 50-119 25 October 1950

From: Chief, Bureau of Medicine and Surgery
To: National Naval Medical Center
Naval Hospitals (Continental)
Naval Medical Supply Depots

Subj: Industrial Relations Institute

Encl: (1) Agenda for the First Scheduled Institute

1. The Office of Industrial Relations has established an institute for the purpose of providing basic and refresher training in the field of industrial relations for representatives of Navy management. The Institute will be sponsored by OIR and is offered to the Bureaus, Offices, the Commandant of the Marine Corps, Military Sea Transportation Service, and all activities under their management control. The Chief of the Office of Industrial Relations has invited the Bureau to submit to him the names of personnel from the field and departmental service who are selected to attend the Institute.

2. The Bureau is of the opinion that attendance at this Institute by Medical Service Corps officers serving as personnel officers at the addressed activities will be of considerable value. Accordingly, addressees are requested to nominate their personnel officers for attendance at one of the Institutes during calendar year 1951. Generally the Bureau would prefer to schedule the candidates located east of the Mississippi during the period from January through June and those located west of the Mississippi during the period July through December. Within the limits of availability of TAD funds, the Bureau will endeavor to secure approval for attendance by each of the personnel officers and will attempt to arrange scheduling in such fashion as to provide the greatest possible interchange of experience between Medical Department activities.

3. The schedule of sessions for the first half of calendar year 1951 is as follows:

8 January through 19 January 1951
29 January through 9 February 1951
19 February through 2 March 1951
12 March through 23 March 1951
2 April through 13 April 1951
23 April through 4 May 1951
14 May through 25 May 1951
4 June through 15 June 1951

4. In view of the excess of nominations to the 1950 sessions over available billets, it is urged that nominations to the 1951 sessions be made to the Bureau as soon as possible and that second choices be specified. Final notification of assignment to the Institute will be made by OIR.

-C. A. Swanson

NAVY DEPARTMENT
BUREAU OF MEDICINE AND SURGERY
WASHINGTON 25, D. C.

OFFICIAL BUSINESS

Permit No. 1048
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